UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,547	01/16/2002	Pinyen Lin	109128	7714

27074 7590 12/27/2004

OLIFF & BERRIDGE, PLC.
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER	
KUMAR, SRILAKSHMI K	
ART UNIT	**PAPER NUMBER**
2675	6

DATE MAILED: 12/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/683,547	LIN ET AL.	
	Examiner	Art Unit	
	Srilakshmi K. Kumar	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *April 18, 2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following office action is in response to Amendment A, filed April 15, 2004. Claims 1, 6, 11, 12, 14-17 have been amended. Claims 26 and 27 are newly added.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1,2,4-9, 11-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobson et al (US 6,445,489) in view of Ota (US 3,668,106) and, further, in view of Howard et al (US 6,222,513).

As to independent claim 1, Jacobson et al disclose an electrophoretic display device (Fig. 1) comprising a unitary spacer layer (Fig. 9, item 62, col. 3, lines 58-60, col. 10, lines 52-59) sandwiched between two conductive film substrates (Fig. 9, col. 10, lines 52-62), at least one of which is transparent (col. 10, lines 52-62),

Jacobson et al do not disclose where the unitary spacer layer defines a multiplicity of individual reservoirs, where the individual reservoirs being filled with a display liquid.

Ota discloses a unitary spacer layer (Fig. 13) with individual reservoirs. In col. 10, lines 7-62, Ota discloses individual reservoirs which are filled with display liquid, and further which are addressable with an electric field in order to produce images.

It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota

discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

Jacobson et al and Ota do not disclose where the spacer layer comprises at least one pocket sheeting layer comprises at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pocket within the joined sheets, and wherein the pockets define the individual reservoirs. Howard et al disclose col. 3, lines 45-62 and Fig. 3, spacing layer encompassing two sheets joined together and containing a pattern of pocket within the joined sheets with individual reservoirs. It would have been obvious to one of ordinary skilled in the art to incorporate the pocket sheeting layer comprises at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pocket within the joined sheets, and wherein the pockets define the individual reservoirs as Howard et al system as it provides a method for implementing improved grey scales, highlight color, and full color gyricons.

As to independent claim 6, limitations of claim 1, and further comprising, wherein the spacer layer is selected from the group consisting of (a) a screen in which holes within the screen define the individual reservoirs, (b) a laser punched spacer layer comprised of a laser ablatable material in a form of a sheet having holes laser punched therein in which the laser punched holes define the individual reservoirs, (c) a pocket spacer layer comprised of sheets joined together and containing a pattern of pockets within the sheets in which the pockets define the individual reservoirs, (d) an etched photoresist layer formed upon one of the conductive film substrates in which holes etched in the photoresist layer define the individual reservoirs, and (e) a composite etched layer comprised of a composite of two photoresist layers sandwiching a conductive film

in which holes etched in the composite define the individual reservoirs. Ota discloses in col. 10, lines 7-62, the spacer layer with individual reservoirs. It would have been obvious to one of ordinary skill in the art to incorporate the unitary spacer layer with individual reservoirs as described by Ota into that of Jacobson et al as Ota discloses in col. 10, lines 22-25, with the individual reservoirs, a uniform display can be produced because flow of the suspension is restricted to the interior of each space.

Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer, Howard et al disclose in col. 6, lines 42-63, where any means can be used to make the sheeting layer. It would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs. Howard et al disclose col. 3, lines 45-62 and Fig. 3, spacing layer encompassing two sheets joined together and containing a pattern of pocket within the joined sheets with individual reservoirs. It would have been obvious to one of ordinary skilled in the art to incorporate the pocket sheeting layer comprises at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pocket within the joined sheets, and wherein the pockets define the individual reservoirs as Howard et al system as it provides a method for implementing improved grey scales, highlight color, and full color gyricons.

As to dependent claim 2, limitations of claim 1, and further comprising, wherein each of the multiplicity of individual reservoirs has a width of about 5 microns to about 200 microns. Although Jacobson et al and Ota do not disclose the width of the individual reservoirs, it would have been obvious to one of ordinary skill in the art that the reservoirs could have been of any width as desired by the user/manufacturer.

As to dependent claim 3, limitations of claim 1, and further comprising, wherein the spacer layer includes solid partition portions separating the individual reservoirs, the solid partition portions having thicknesses of from about 10 to about 100 microns. Jacobson and Ota do not disclose where the solid partition portions are of a certain thickness. Ota discloses in Fig. 13, individual reservoirs showing solid partition portions. It would have been obvious to one of ordinary skill in the art that the partitions could have been of any thickness as desired by the user/manufacturer.

As to dependent claim 4, limitations of claim 1, and further comprising, wherein the display liquid has a color and contains one set of particles with a different, contrasting color from the color of the colored display liquid. Jacobson do not disclose wherein the display liquid has color. Ota discloses where the display liquid has a color and contains one set of particles with a different, contrasting color from the color of the colored display liquid in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 5, limitations of claim 1, and further comprising, wherein the display liquid is transparent and contains at least two sets of particles with different, contrasting color to each other. Jacobson do not disclose where the display liquid is transparent and contains at least two sets of particles. Ota discloses where the display liquid is transparent and contains at least two sets of particles in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claims 7-11, see limitations of claim 6, above.

As to dependent claim 12, limitations of claim 10, and further comprising, wherein the pocket spacer layer comprises a composite pocket layer of a first pocket sheet in which the display liquid has a first color and a second pocket sheet layer in which the display liquid has

a second color, wherein the first pocket sheet and the second pocket sheet are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer. Jacobson does not disclose pocket sheets. Ota in col. 8, lines 6-34 and col. 10, lines 52-62 disclose first pocket sheet in which the display liquid has a first color and a second pocket sheet layer in which the display liquid has a second color. Howard et al disclose col. 3, lines 45-62 and Fig. 3, spacing layer encompassing two sheets joined together and containing a pattern of pocket within the joined sheets with individual reservoirs. It would have been obvious to one of ordinary skilled in the art to incorporate the pocket sheeting layer comprises at least one pocket sheeting layer comprised of at least two sheets joined together and containing a pattern of pocket within the joined sheets, and wherein the pockets define the individual reservoirs as Howard et al system as it provides a method for implementing improved grey scales, highlight color, and full color gyricons.

As to dependent claim 13, limitations of claim 12, and further comprising, wherein the first color is black and the second color is an additional color. Ota discloses in col. 10, lines 52-62, where the first color is black and the second color is an additional color.

As to dependent claim 14, limitations of claim 10, and further comprising, wherein the pocket spacer layer comprises a composite pocket layer of three pocket sheets, each pocket sheet exhibiting a different color, wherein the three pocket sheets are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer disclosed by Ota in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 15, limitations of claim 14, and further comprising, wherein the three colors are cyan, magenta and yellow. Ota discloses different colors in col. 8, lines 6-34.

As to dependent claims 16, 26 and 27, limitations of claims 10, 12 and 26, and further comprising, wherein the pocket spacer layer comprises a composite pocket layer of four pocket sheets, each sheet exhibiting a different color, wherein the four pocket sheets are placed atop each other and wherein there are no overlapping pockets in the composite pocket layer disclosed by Ota in col. 8, lines 6-34 and col. 10, lines 52-62.

As to dependent claim 17, limitations of claim 16 and further comprising, wherein the four colors are cyan, magenta, yellow and black. Ota discloses different colors in col. 8, lines 6-34.

As to dependent claim 18, limitations of claim 6, and further comprising, wherein the spacer layer is the etched photoresist layer. Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer. Howard et al disclose in col. 6, lines 42-63, where any means can be used to make the sheeting layer. It would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs.

As to dependent claim 19, limitations of claim 6, and further comprising, wherein the spacer layer is the composite etched layer. Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer. Howard et al disclose in col. 6, lines 42-63, where any means can be used to make the sheeting layer. It would have been obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs.

As to dependent claim 20, limitations of claim 19, and further comprising, wherein the conductive film of the composite etched layer is a metal. Jacobson et al and Ota do not disclose the means in which the reservoirs are made in the spacer layer. Howard et al disclose in col. 6, lines 42-63, where any means can be used to make the sheeting layer. It would have been

obvious to one of ordinary skill in the art that any means could have been used to define the individual reservoirs.

As to dependent claim 21, limitations of claim 6, and further comprising, wherein each of the multiplicity of individual reservoirs has a width of about 5 microns to about 200 microns. Although Jacobson et al and Ota do not disclose the width of the individual reservoirs, it would have been obvious to one of ordinary skill in the art that the reservoirs could have been of any width as desired by the user/manufacturer.

As to dependent claim 22, limitations of claim 6, and further comprising, wherein the spacer layer includes solid partition portions separating the individual reservoirs, the solid partition portions having thicknesses of from about 10 to about 100 microns. Ota discloses in Fig. 13, individual reservoirs showing solid partition portions. Although Ota does not disclose where the solid partition portions are of a certain thickness, it would have been obvious to one of ordinary skill in the art that the partitions could have been of any thickness as desired by the user/manufacturer.

As to dependent claim 23, limitations of claim 6, and further comprising, wherein the device further includes a conductive path on a bottom surface of one of the conductive film substrates in a pattern such that each of the individual reservoirs are separately addressable with an electric field. Ota discloses where the individual reservoirs are separately addressable in col. 10, lines 7-62.

As to dependent claim 24, limitations of claim 6, and further comprising, wherein the transparent conductive film substrate comprises a film of polyethylene terephthalate coated with indium tin oxide (col. 4, lines 45-47)

As to dependent claim 25, limitations of claim 6, and further comprising, wherein the transparent conductive film substrate comprises a film of polyethylene terephthalate coated with silver. Although Jacobson et al do not disclose where the film is coated with silver, it would have been obvious to one of ordinary skill in the art that silver could have been used as silver has similar properties to that of indium tin oxide.

Response to Arguments

3. Applicant's arguments, see Amendment B, filed April 15, 2004, with respect to the rejection(s)of claim(s) 1 and 6 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Jacobson et al in view of Ota et al and further in view of Howard et al.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 703 306 5575. The examiner can normally be reached on 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, xxxx xxxx can be reached on xxx xxx xxxx. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Srilakshmi K. Kumar
Examiner
Art Unit 2675

SKK
December 23, 2004

AMR A. AWAD
PRIMARY EXAMINER